

This Listing of Claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (Currently amended) A light emitting apparatus comprising:

a light emitting device disposed on a supporting body;

[[a fluorescent substance that absorbs at least a portion of light emitted by said light emitting device and emits light of a different wavelength;]] and

a coating layer [[that contains said]] comprising a fluorescent substance and [[covers]] covering at least [[the]] a surface of said light emitting device, said fluorescent substance absorbs at least a portion of light emitted by said light emitting device and emits light of a different wavelength;

wherein said coating layer comprises an oxide including at least one element selected from the group consisting of Si, Al, Ga, Ti, Ge, P, B, Zr, Y, Sn, Pb and alkali earth metals, and a hydroxide including at least one element selected from the group consisting of Si, Al, Ga, Ti, Ge, P, B, Zr, Y, Sn, Pb and alkali earth metals.

Claim 2 (Currently amended) The light emitting apparatus according to claim 1,

wherein [[said oxide is the main component of said coating layer, and]] said hydroxide contains the same metal as that of said oxide.

Claim 3 (Currently amended) The light emitting apparatus according to claim 1,

wherein said fluorescent substance [[particles]] in said coating layer [[are]] is surrounded by particles [[containing]] comprising said oxide [[as the main component]].

Claim 4 (Currently amended) The light emitting apparatus according to claim 1,

wherein said coating layer comprises an organometallic compound [[containing]] comprising at least one element selected from the group consisting of Si, Al, Ga, Ti, Ge, P, B, Zr, Y, Sn, Pb and alkali earth metals.

Claim 5 (Currently amended) The light emitting apparatus according to claim 1,

wherein said coating layer has a substantially uniform thickness over ~~[[the]]~~ a top surface, ~~[[the]]~~ a side ~~[[faces]]~~ face and ~~[[the corners]]~~ a corner of said light emitting device.

Claim 6 (Currently amended) The light emitting apparatus according to claim 1,
wherein said coating layer ~~[[continuously]]~~ covers the surface of said supporting body and the entire surface of said light emitting device, and the thickness of said coating layer ~~[[provided]]~~ on ~~[[the]]~~ a top surface, ~~[[the side faces and the corners]]~~ a side face and a corner of said light emitting device and the thickness of said coating layer ~~[[provided]]~~ on ~~[[the]]~~ a surface of said supporting body are substantially the same.

Claim 7 (Currently amended) The light emitting apparatus according to claim 1,
wherein said coating layer comprises at least two layers, each layer having a refractive index that is smaller than that of a nitride ~~[[semiconductors that constitutes]]~~ semiconductor of said light emitting device, and the refractive index of each layer decreases gradually with the distance from said light emitting device.

Claim 8 (Previously presented) The light emitting apparatus according to claim 1,
wherein said light emitting device is disposed so as to oppose the top surface of said supporting body via an adhesive layer, while the adhesive layer contains the same material as that of said coating layer.

Claim 9 (Previously presented) The light emitting apparatus according to claim 8,
wherein said adhesive layer contains particles of an oxide and a hydroxide.

Claim 10 (Currently amended) The light emitting apparatus according to claim 8,
wherein said adhesive layer ~~[[continuously]]~~ extends over ~~[[the]]~~ a side ~~[[faces]]~~ face of said light emitting device.

Claim 11 (Currently amended) The light emitting apparatus according to claim 1,

wherein said light emitting device has ~~[[a main]]~~ an emission peak at a wavelength from 250 nm to 530 nm, and ~~[[main]]~~ an emission wavelength of said fluorescent substance is longer than ~~[[the]]~~ a wavelength of the main emission peak of said light emitting device.

Claim 12 (Currently amended) The light emitting apparatus according to claim 1,
wherein said fluorescent substance is yttrium aluminum ~~[[garnet-based]]~~ garnet-
containing fluorescent substance that includes: Y; Al; at least one element selected from
~~[[among]]~~ the group consisting of Lu, Sc, La, Gd, Tb, Eu and Sm; and at least one element
selected from ~~[[among]]~~ the group consisting of Ga and In,
and said fluorescent substance is activated with ~~[[at least one element selected from~~
~~among]]~~ a rare earth ~~[[elements]]~~ element.

Claim 13 (Currently amended) The light emitting apparatus according to claim 1,
wherein said fluorescent substance includes: N; at least one element selected from
~~[[among]]~~ the group consisting of Be, Mg, Ca, Sr, Ba and Zn; at least one element selected from
~~[[among]]~~ the group consisting of C, Si, Ge, Sn, Ti, Zr and Hf; and a ~~[[nitride-based]]~~ nitride-
containing fluorescent substance activated with ~~[[at least one element selected from among]]~~ a
rare earth ~~[[elements]]~~ element.

Claim 14 (Currently amended) The light emitting apparatus according to claim 1,
wherein said light emitting device emits light in ultraviolet region and said coating layer
contains at least one fluorescent substance selected from ~~[[among]]~~ the group consisting of:

(1) $\text{Ca}_{10}(\text{PO}_4)_6\text{FCl}$: Sb, Mn

(2) $\text{M}_5(\text{PO}_4)_3\text{Cl}$: Eu (M represents at least one element selected from ~~[[among]]~~ the group
consisting of Sr, Ca, Ba, Mg)

(3) $\text{BaMg}_2\text{Al}_{16}\text{O}_{27}$: Eu

(4) $\text{BaMg}_2\text{Al}_{16}\text{O}_{27}$: Eu, Mn

(5) $3.5\text{MgO} \bullet 0.5\text{MgF}_2 \bullet \text{GeO}_2$: Mn

(6) $\text{Y}_2\text{O}_2\text{S}$: Eu

(7) $\text{Mg}_6\text{As}_2\text{O}_{11}$: Mn

(8) $\text{Sr}_4\text{Al}_{14}\text{O}_{25}$: Eu

(9) (Zn, Cd)S: Cu

(10) SrAl₂O₄: Eu

(11) Ca₁₀(PO₄)₆ClBr: Mn, Eu

(12) Zn₂GeO₄: Mn

(13) Gd₂O₂S: Eu, and

(14) La₂O₂S: Eu

Claim 15 (Currently amended) The light emitting apparatus according to claim 1, wherein said supporting body has a lead [[electrodes]] electrode and said light emitting device is provided on said supporting body that is insulated from said lead [[electrodes]] electrode.

Claim 16 (Currently amended) A light emitting apparatus comprising: a supporting body; and adhesive layer, and a light emitting device [[constituted from]] comprising a gallium [[nitride-based]] nitride-containing compound semiconductor [[layers formed on a substrate]] layer, in this order, [[said light emitting device being disposed on said supporting substrate so that the substrate-side surface of said light emitting device opposes the top surface of said supporting body via an adhesive layer;]]

wherein said adhesive layer comprises an oxide containing at least one element selected from the group consisting of Si, Al, Ga, Ti, Ge, P, B, Zr, Y, Sn, Pb and alkali earth metals and a hydroxide containing at least one element selected from the group consisting of Si, Al, Ga, Ti, Ge, P, B, Zr, Y, Sn, Pb and alkali earth metals.

Claim 17 (Currently amended) The light emitting apparatus according to claim 16, wherein said adhesive layer [[includes]] comprises particles of said oxide and said hydroxide.

Claim 18 (Currently amended) [[The light emitting apparatus according to claim 16]] A light emitting apparatus comprising: a supporting body; an adhesive layer, and a light emitting device comprising a gallium nitride-containing compound semiconductor layer, said light emitting device being disposed on said supporting substrate via the adhesive layer;

wherein said adhesive layer comprises an oxide containing at least one element selected from the group consisting of Si, Al, Ga, Ti, Ge, P, B, Zr, Y, Sn, Pb and alkali earth metals, and a hydroxide containing at least one element selected from the group consisting of Si, Al, Ga, Ti, Ge, P, B, Zr, Y, Sn, Pb and alkali earth metals,

wherein said adhesive layer ~~[[continuously]]~~ extends over ~~[[the]]~~ a side ~~[[faces]]~~ face of the light emitting device.

Claim 19 (Currently Amended) ~~[[The light emitting apparatus according to claim 16]]~~ A light emitting apparatus comprising: a supporting body; an adhesive layer, and a light emitting device comprising a gallium nitride-containing compound semiconductor layer, said light emitting device being disposed on said supporting substrate via the adhesive layer;

wherein said adhesive layer comprises an oxide containing at least one element selected from the group consisting of Si, Al, Ga, Ti, Ge, P, B, Zr, Y, Sn, Pb and alkali earth metals, and a hydroxide containing at least one element selected from the group consisting of Si, Al, Ga, Ti, Ge, P, B, Zr, Y, Sn, Pb and alkali earth metals,

wherein said light emitting device has a main emission peak at a wavelength in a range from 250 nm to 530 nm.

Claim 20 (Currently amended) ~~[[The light emitting apparatus according to claim 16]]~~ A light emitting apparatus comprising: a supporting body; an adhesive layer, and a light emitting device comprising a gallium nitride-containing compound semiconductor layer, said light emitting device being disposed on said supporting substrate via the adhesive layer;

wherein said adhesive layer comprises an oxide containing at least one element selected from the group consisting of Si, Al, Ga, Ti, Ge, P, B, Zr, Y, Sn, Pb and alkali earth metals, and a hydroxide containing at least one element selected from the group consisting of Si, Al, Ga, Ti, Ge, P, B, Zr, Y, Sn, Pb and alkali earth metals,

wherein the adhesive layer ~~[[contains]]~~ comprises a filler having a heat conductivity higher than that of said oxide.

Claim 21 (Currently amended) The light emitting apparatus according to claim 1 or ~~[[16]]~~ 15,

wherein said light emitting device includes:
a support substrate;
a junction layer that is formed on one principal surface of the support substrate, said junction layer having a eutectic layer; and
stacked layers comprising a p-type nitride semiconductor layer of single-layer or multi-layer structure formed on the junction layer, an active layer formed on the p-type nitride semiconductor layer, and an n-type nitride semiconductor layer of single-layer or multi-layer structure formed on the active layer.

Claim 22 (Currently amended) The light emitting apparatus according to claim 21,
wherein at least part of ~~[[the]]~~ a surface of the stacked layers has a concave-convex shape.

Claim 23 (Withdrawn) A method of manufacturing a light emitting apparatus comprising a light emitting device disposed on a supporting body; a fluorescent substance that absorbs at least a portion of light emitted from said light emitting device and emits light of a different wavelength; and a coating layer that includes said fluorescent substance and covers at least the surface of said light emitting device, the method comprising:

a first step of preparing a coating solution that contains an organometallic compound including at least one element selected from the group consisting of Si, Al, Ga, Ti, Ge, P, B, Zr, Y, Sn, Pb and alkali earth metals; an organic solvent; and a fluorescent substance;

a second step of applying said coating solution onto the surface of said light emitting device and the surface of said supporting body; and

a third step of drying said coating solution so as to fix said fluorescent substance.

Claim 24 (Withdrawn) The method of manufacturing a light emitting apparatus according to claim 23,

wherein boiling point of said organic solvent used in said first step is in a range from 100°C to 200°C.

Claim 25 (Withdrawn) The method of manufacturing a light emitting apparatus according to claim 23,

wherein said coating solution used in said first step is a hydrolyzed solution having viscosity in a range from 2.5 to 500 cps at 25°C.

Claim 26 (Withdrawn) The method of manufacturing a light emitting apparatus according to claim 23,

wherein said coating solution used in said first step has acid concentration in a range from 20 to 500 ppm.

Claim 27 (Withdrawn) The method of manufacturing a light emitting apparatus according to claim 23,

wherein said coating solution including said fluorescent substance is sprayed in the form of mist of rotating spiral stream onto said light emitting device from above, while said light emitting device mounted on said supporting body is heated in said second step.

Claim 28 (Withdrawn) The method of manufacturing a light emitting apparatus according to claim 23,

wherein said light emitting device is heated to a temperature in a range from 50°C to 300°C in said second step.

Claim 29 (Withdrawn) The method of manufacturing a light emitting apparatus according to claim 23,

wherein the organometallic compound used in said first step is at least one selected from the group consisting of methyl silicate, ethyl silicate, N-propyl silicate, N-butyl silicate, aluminum isopropoxide, aluminum ethoxide and aluminum butoxide.

Claim 30 (Withdrawn) A method of manufacturing a light emitting apparatus having a supporting substrate; a light emitting device consisting of gallium nitride-based compound semiconductor layers formed on a substrate, said light emitting device being disposed so that the

substrate-side surface of said light emitting device opposes the top surface of said supporting body via an adhesive layer, the method comprising:

a first step of preparing an adhesive solution that contains an organometallic compound containing at least one element selected from the group consisting of Si, Al, Ga, Ti, Ge, P, B, Zr, Y, Sn, Pb and alkali earth metals, and an organic solvent, so as to obtain a hydrolyzed solution having viscosity in a range from 2.5 to 500 cps at 25°C and acid concentration in a range from 20 to 500 ppm;

a second step of applying the adhesive solution to the top surface of said supporting body and placing said light emitting device on the adhesive solution; and

a third step of drying the adhesive solution at a temperature in a range from 50°C to 300°C so as to bond the top surface of said supporting body and the substrate-side surface of said light emitting device.

Claim 31 (Withdrawn) The method of manufacturing a light emitting apparatus according to claim 30,

wherein boiling point of said organic solvent used in said first step is in a range from 100°C to 200°C.

Claim 32 (Withdrawn) The method of manufacturing a light emitting apparatus according to claim 30,

wherein said organometallic compound used in said first step is at least one selected from the group consisting of metal alkoxide, metal diketonate and metal carbonate.

Claim 33 (Withdrawn) The method of manufacturing a light emitting apparatus according to claim 30,

wherein said adhesive layer contains a filler having heat conductivity higher than that of the oxide generated from said organometallic compound.

Claim 34 (Withdrawn) A method of manufacturing a light emitting apparatus having a light emitting device disposed on a supporting body; a fluorescent substance that absorbs at least a portion of light emitted by said light emitting device and emits light of a different wavelength;

and a coating layer that includes the fluorescent substance and covers from the surface of said supporting body to the entire surface of said light emitting device,

wherein a coating solution containing said fluorescent substance is sprayed in the form of mist of rotating spiral stream onto said light emitting device from above, while said light emitting device mounted on said supporting body is heated.

Claim 35 (Withdrawn) The method of manufacturing a light emitting apparatus according to claim 34,

wherein the diameter of the spiral stream increases from the start point of the spray located above said light emitting device toward the surface of said light emitting device.

Claim 36 (Withdrawn) The method of manufacturing a light emitting apparatus according to claim,

wherein rotating speed of said coating solution decreases from the start point of the spray located above said light emitting device toward the surface of said light emitting device.

Claim 37 (Withdrawn) The method of manufacturing the light emitting apparatus according to claim 23, 30 or 34,

wherein said light emitting device comprises

a support substrate,

a junction layer that is formed on one principal surface of said support substrate, said junction layer having a eutectic layer; and

stacked layers including a p-type nitride semiconductor layer of single-layer or multi-layer structure formed on the junction layer, an active layer formed on the p-type nitride semiconductor layer; and an n-type nitride semiconductor layer of single-layer or multi-layer structure formed on the active layer.

Claim 38 (Withdrawn) The method of manufacturing a light emitting apparatus according to claim 37,

wherein at least a portion of the surface of said stacked layers has a concave-convex shape.

Claim 39 (New) A light emitting apparatus comprising:
a supporting body;
a light emitting device comprising a gallium nitride-based compound semiconductor layer on the supporting body; and
an inorganic coating layer comprising a fluorescent substance and covering at least a surface of said light emitting device, said fluorescent substance absorbs at least a portion of light emitted by said light emitting device and emits light of a different wavelength.

Claim 40 (New) The light emitting apparatus of claim 39, further comprising an adhesive layer between the supporting layer and the light emitting layer.

Claim 41 (New) The light emitting apparatus of claim 39, wherein said light emitting device has a main emission peak at a wavelength in a range from 250 nm to 530 nm.